

IN THE CLAIMS:

Claim 1 (Currently Amended): An apparatus for separating non-magnetic mineral values from a source material containing magnetic material and non-magnetic material, the apparatus comprising:


62 a first endless conveyer having a front end and a rear end, the first endless conveyer having a textured surface and having a plurality of spaced apart paddles removably mounted thereon;

a second endless conveyer positioned beneath and parallel to the first conveyer in a vertically spaced relationship therewith and having a front end and a rear end, the front end of the second conveyer positioned rearward with respect to the front end of the first conveyer to define a longitudinally staggered relationship between the first conveyer and the second conveyer, the second endless conveyer being configured to receive the source material adjacent its rear end;

a motor for driving the first conveyer in a first direction and the second conveyer in a second direction opposite to the first direction such that a bottom surface of the first endless conveyer and a top surface of the second endless conveyer are driven in substantially the same direction from the respective rear ends towards the respective front ends;

a first wall and a second wall extending between the first conveyer and the second conveyer substantially along the entire length of each conveyer, the first and second walls, the bottom surface of the first endless conveyer, the top surface of the first endless

conveyer, and the paddles collectively forming an enclosure within which the source material is positioned; and

 a magnetic separation assembly mounted within the first endless conveyer for acting on the source material within the enclosure, the assembly having a frame for supporting discrete sections of magnets, the sections of magnets being mounted to the frame in spaced longitudinal relation to form alternating areas of presence and absence of a magnetic field such that the magnetic separation assembly permits the magnetic fields to intermittently act on the source material to progressively separate the magnetic material from the non-magnetic material as the material is transported along the second endless conveyer within the enclosure.

Claim 2 (Original): The apparatus according to claim 1, wherein the magnetic separation assembly is removably mounted within the first endless conveyer.

Claim 3 (Original): The apparatus according to claim 1, further comprising an adjustable support for supporting the first endless conveyer and the second endless conveyer such that the first and second endless conveyers are adjustable vertically relative to one another.

Claim 4 (Original): The apparatus according to claim 1, wherein the magnetic separation assembly includes, adjacent the front end of the first endless conveyer, a magnetic section having about twice the magnetic field strength of the other of the magnetic sections.

Claim 5 (Original): The apparatus according to claim 1, wherein the motor drives the first conveyer and the second conveyer at a speed ratio of about 4:1.

Claim 6 (Original): The apparatus according to claim 1, wherein the magnetic sections are made of substantially the same magnet composition.

Claim 7 (Original): The apparatus according to claim 1, wherein at least some of the magnetic sections are made of different magnet compositions.

Claim 8 (Original): The apparatus according to claim 1, wherein the first endless conveyer is configured to receive the source material on a top surface thereof and discharge the source material on a top surface of the second endless conveyer at the rear end thereof.

Claims 9-57 (Canceled).
